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Genetic and Environmental Factors Affecting Smoking Behavior.

The main aim is to conduct a comprehensive and detailed analysis of the degree to which genetic and environmental factors are involved in the determination of smoking behavior. A pilot study of randomly-sampled adults will be conducted in Denver, Colorado. This will be followed by a much larger study of adult Swedish twins and their adult relatives. In both cases, information will be obtained from a set of individually administered questionnaires dealing with smoking behavior and other constitutional and environmental variables.

Subsequent analyses will be based on a path model that relates genetic and environmental effects. Primary emphasis will be placed on obtaining unbiased estimates of narrow-sense heritability for various components of smoking behavior. Estimates of parameters associated with nonadditive genetic variance, assortative mating, prenatal environment and postnatal environment will also be obtained. A broad-sense heritability estimate will be constructed which pertains to the Swedish urban population in the range of environments investigated.

In addition, studies will be conducted on (1) the interrelationships of smoking, constitutional and socioeconomic variables; (2) changes of smoking behavior with time, and (3) methodologies to be used for analyses of smoking behavior traits more complex than those of smoking incidence and tobacco consumption.

Activation Date: June 1, 1976

Current Grant Level: $197,128.

1005075548

Source: https://www.industrydocuments.ucsf.edu/docs/thxl0000